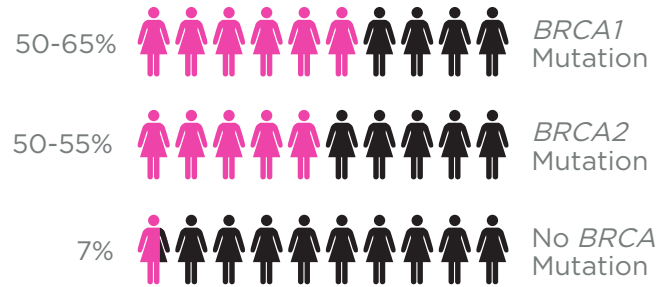


RESEARCH SAVES LIVES

BRCA1 and *BRCA2* (BReast CAncer susceptibility genes 1 and 2) are genes that repair defects in our DNA. When functioning normally, they help prevent tumors from forming. When mutations occur in BRCA genes, this function is disrupted and they cannot effectively repair DNA damage. This allows defects to accumulate in DNA, making BRCA mutant cells more prone to cancer.

While everyone has *BRCA1* and *BRCA2* genes, those who have an inherited mutation in one or both genes have an increased risk of inherited, or hereditary, breast cancer. *BRCA* mutations can also occur sporadically in breast cells. While not inherited, these mutations make breast cells more prone to cancer. Additional research is needed to better identify and detect *BRCA* mutations, prevent hereditary breast cancer in people with inherited *BRCA* mutations, and treat *BRCA*-driven breast cancers.

Chances of Developing Breast Cancer by Age 70



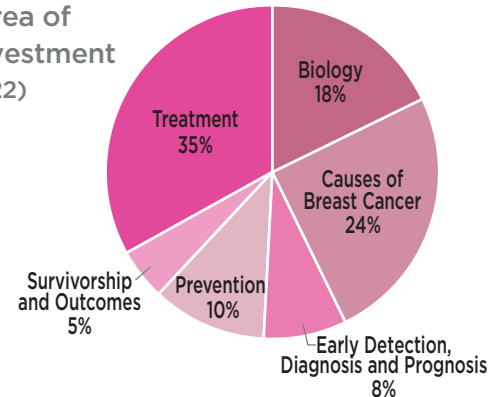
Learn more about *BRCA* and breast cancer in women [here](#) and in men [here](#).

OUR RESEARCH INVESTMENT: More than **\$68 million** in over **150 research grants** and more than **20 clinical trials** focused on *BRCA* mutations in breast cancer (1982-2022)

What We're Investigating

- Identifying new therapies that harness the immune system to more effectively treat *BRCA1* and *BRCA2* mutant breast cancers.
- Identifying new therapies to overcome drug resistance and stop recurrence in people with inherited or sporadic *BRCA* mutant breast cancers.
- Improving long-term outcomes for people with *BRCA* mutant breast cancers by investigating how the immune system impacts treatment responses

Topic Area of Total Investment (1982-2022)



WHAT WE'VE LEARNED from Komen-funded research

- Different populations have different *BRCA* mutations, which may affect their relative risk of developing breast cancer.
- Women from The Bahamas appear to be twice as likely to have a *BRCA1* mutation than the general population.
- Newly identified risk factors may help predict which women with a *BRCA* mutation will get breast cancer.



Komen Scientific Advisory Board Member Dr. Alan Ashworth brings his expertise in cancer genetics to the development of new therapeutic approaches. He was a key part of the team that identified the *BRCA2* breast cancer susceptibility gene. Read more [here](#).